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AUTHOR Adelman, Clifford
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ABSTRACT

Information is presented on the use of transcripts to validate institutional mission, proposing that transcript archives can serve as grounds against which the validity of an institution's claimed mission with respect to its primary beneficiaries can be measured. This is done with a focus on the community college. The National Longitudinal Study (NLS) and its Postsecondary Transcript Sample (PETS), which is taken at age 30, are used. Topics of discussion are as follows: demographics and attendance patterns; time of attendance; the role of aspirations and plans; attendees: academic background and general ability; course-taking: the community college as provider of knowledge; the concept of principal provider; labor market outcomes: the emphases of work; and community college attendance and the bachelor's degree. It is concluded that: (1) the institution seems to function in a variety of occasional roles, serving individuals for ad hoc purposes; (2) the community college functions as an intermediary institution for individuals in transit from one status to another; and (3) the community college is a testing ground offering individuals a chance to test their tolerance for postsecondary education. Twenty nine tables are appended. Contains 23 references. (SM)

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USING TRANSCRIPTS TO VALIDATE INSTITUTIONAL MISSION: THE ROLE OF THE COMMUNITY COLLEGE IN THE POSTSECONDARY EXPERIENCE OF A GENERATION

Clifford Adelman
Senior Associate, Office of Research, U.S.E.D.

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Texas A&M University
Department of Educational
Administration
College Station, TX 77843
(409) 845-0393

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Using Transcripts to Validate Institutional Mission: the Role of the Community College in the Postsecondary Experience of a Generation

Clifford Adelman
Senior Associate, Office of Research, U.S.E.D.

I. Background:

The accumulated data of the National Longitudinal Study of the High School Class of 1972 provide administrators, policymakers, and researchers with the richest archive ever assembled on a generation of Americans. The NLS/72 consists of five (5) surveys with extraordinarily high response rates and robust samples that followed the cohort from age 18 through age 32, and a postsecondary transcript sample (PETS) taken at age 30. The base year (BY) sample consisted of 22,600 students; the 5th Follow-Up (FU5), which includes elaborate data on labor market experience, involved 12,800 students; and the transcript sample covered 12,600. Used in appropriate combinations, these data sets allow one to trace the relationships among background variables (including high school experience), postsecondary experience (coursetaking, attendance patterns, etc.), and intermediate-term labor market outcomes. No other extant national dataset, longitudinal or cross-sectional, can do that.

The true key to this extraordinary archive is the transcript sample, the PETS. The surveys are intrusive phenomenological artifacts; the transcripts are unobtrusive empirical artifacts. While they may fail to include key information, while the idiosyncrasies of registrar practices and institutional regulations may render some of them difficult to read or compare with other transcripts, transcripts neither exaggerate nor forget. People responding to surveys, however, do both.

The particular virtue of the NLS postsecondary transcripts lies in the fact that they were gathered in 1984, some 12 years after the cohort graduated from high school. This long-term time frame provides, for the first time, an adequate metric with which to measure educational progress and attainment after high school. Debates about retention, persistence, and achievement are placed in a wholly new light by these data. The data allow us to describe "postsecondary careers" with a confidence we have not previously enjoyed. And because the transcripts contain such a wealth of information about coursetaking, they allow us to describe, in significant detail, the curricular content of higher education as experienced by those who move through the system, not as expressed by those who write college catalogues or those who fill out enrollment survey forms.

But that confidence and ability to delineate detail depends heavily on the accuracy with which the transcripts are coded, along with the credibility of labor market variables constructed

from the FU5 survey. Unfortunately, the public release data tapes of the NLS/PETS evidence an unacceptably high error rate in coding (Adelman, 1989), and the FU5 codebook (Tourengau, et al., 1987) presents categories for standard variables of occupation and industry in ways that invite misuse and distortion, e.g. railroad conductors are in the same class with CEOs, embalmers in the same class with neurosurgeons.

With the sponsorship of the Office of Research/U.S.E.D., the National Science Foundation, and the U.S. Department of Labor, with the assistance of 17 teams of external faculty raters, and with the programming work and advice of my colleague, Nabeel Alsalam of the National Center of Education Statistics, I have spent the past two years recoding the NLS/PETS and constructing analytic variables for the descriptive aspects of both the PETS and the FU5. This process has been largely completed, and the data on which this paper is based are highly accurate. There are still some quirks and, on some variables (e.g. date of first attendance at a community college), too many missing cases for comfort, but these problems are not wholly insoluble.

The reader should find instructive the following examples of the errors I found and (by implication) the nature and extent of corrections made in our analysis files:

- 18% of the degrees in the NLS/PETS were misclassified, e.g. Associate's degrees that should have been Bachelor's, Bachelor's degrees that should have been Associate's etc. For example, the original (1984) contractor's coders classified any degree beginning with the letter, "A," as an Associate's degree. Thus, 129 A.B.s and A.M.s from such institutions as Stanford, Illinois, Indiana, Smith, Oberlin, and UNC/Chapel Hill, were originally classified as Associate's degrees.

- 4% of the Bachelor's degrees were counted twice, and 5% of the graduate degrees were coded as no degree. Most of these cases resulted from graduate school transcripts that noted the prior receipt of a B.A. The coders put down either both the B.A. and the graduate degree or the B.A. only.

- 30% of the majors of Bachelor's degree students were misclassified. This phenomenon usually occurred in cases in which the student attended two or more institutions prior to the B.A. (32% of them did). The coder often entered the major indicated on the transcript of the school of first attendance, not the major on the transcript of the school that awarded the degree.

- o 25% of the dates of degrees were miscoded. In fact, in 23% of the Bachelor's degree cases and 16% of the Associate's degree cases, either the date of entry was coded as the date of the degree or the dates were entered backwards so that the individual wound up with a negative time of attendance.

- o 40% of the 484,515 courses entered on the transcripts were subject to one of three kinds of miscodings: those of ignorance (paleontology is not a biology course), those of absurdity (parasitology is not international education), or those resulting from taxonomic limitations of the Classification of Instructional Programs (CIP).

In addition, there were three major problems with transcripts from community colleges that are relevant to the analyses in this paper, and with which the reader should be familiar. Although the ratio of transcripts received to transcripts requested from community colleges was high (88.2% versus 88.5% for private colleges and 55.1% for proprietary schools, for example), 234 (4%) of those received contained no course or term information at all. A very small number, in fact, indicated that an Associate's degree or a certificate was awarded, but offered no other details. In 145 (3%) cases, no term dates were entered on the transcripts, so it is impossible to determine when these people entered community colleges or when they last attended.

There are also some community college districts with multiple campuses in which attendance at one campus generates both a central office transcript and a campus transcript. The original contractor failed to notice the few cases of these duplicate records, but we caught them and stripped them.

Lastly, community college transcripts usually do not indicate a "major." I assigned "majors" to almost all Associate's degrees (N=1596) for which that information was missing, and using threshold rules regarding minimum credits on the transcripts (30) and minimum credits in a particular field (18). Where no particular disciplinary or occupational field dominated, the major was assigned as either "Liberal Arts and Sciences" or "General Studies," depending on the configuration of courses (see note to Table 19). The same procedure was followed for the 231 certificates indicated on the records of students who attended community colleges.

Once such errors were rooted out, missing information inserted, and the CIP system overhauled for purposes of this project (we deleted approximately 400 of the original 1100 CIP codes, and added about 325), the results of subsequent analyses on such issues as persistence, degree production, attendance patterns,

curriculum, and relationships between coursetaking and labor market experience are far more valid.

II. Limitations of the Dataset

The very virtues of the NLS/PETS and the NLS surveys are simultaneously limitations to many researchers and policymakers. The most obvious issue is that of time. On the one hand, the NLS inherently allows what no other data base can: enough time for people to earn degrees and/or pursue one or more vocations long enough to generate career paths. On the other hand, the postsecondary schooling of the High School Class of 1972 took place, for the most part, a decade ago. The usual response to findings from the NLS surveys and transcripts in this regard is, "That's the way is used to be; but it's different today."

That response may be accurate. But without a parallel data set, the respondent does not know for sure either that there is a difference or how significant that difference might be. The postsecondary transcript samples of High School and Beyond are not parallel datasets because (a) they were taken at 4 1/2 (HSB Sophomores) and 3 1/2 (HSB Seniors) years after high school graduation versus 12 for the NLS, and (b) the samples were much smaller than the NLS. If NCES holds to its current plans to take a postsecondary transcript sample of the HSB Sophomores (High School Class of 1982) in 1992, then and only then will we have the grounds for accurate time-series data. And then and only then can noble attempts to use the survey data of both NLS and HSB (e.g. Hilton and Lee, 1988) be recast in far more accurate form.

A second limitation is that we have transcripts only for those students who are classified by institutions in such a way as to generate records. Institutional practices with respect to occasional or special students or those enrolled in continuing education programs are very inconsistent. Some generate individual records; some do not. The NLS survey data suggest that approximately 5% of those who attended postsecondary institutions were "special students" at one time or another in their postsecondary careers through age 32. Indeed, when transcripts were sought for the PETS sample on the basis of individual claims of attending particular institutions, in 6% of the cases the institution had no record of the individual. While the statistical weights used in the NLS/PETS adjust for such non-responses, as a historian, I am troubled by them.

II. The Question and the Method

Given the richness of the dataset, there are enough projects to consume a generation of researchers for a decade. In 1990, OERI

will publish a collection of 8-10 selected studies written by OR and NCES staff illustrating the different types of inquiries that can be accommodated by the data. This collection, Archives of a Generation, will invite other researchers to continue, expand upon, and refine these (and other) types of inquiries.

A modified version of this paper will eventually become a chapter in Archives of a Generation. Using a purposefully prosaic method that borrows from the historiography of the annalistes and the tradition of Kulturgeschichte, it asks a series of questions about the function of a particular type of institution in the lives of individuals. The most basic of the questions is this: Based on the records of those individuals who passed through it, what role does this type of institution play in the U.S. system of postsecondary education?

To be sure, this is a limited definition of institutional role, but one that focuses wholly on the primary beneficiaries of all educational institutions: students. Even so, let us acknowledge that the traces which we are examining are left only by those students who generate records, however skimpy those records may be. I will return to this issue at a later point; but it bears underscoring here that I do not pretend to talk about the service roles institutions play in local communities, about the fiscal roles they play in regional economies, about the roles they play in the advancement of knowledge on a national or international scale. Nor do I intend to enter the long-standing arguments over whether community colleges promote or hinder access to higher education, or whether they act as self-interested institutions more than responsive institutions (Karabel, 1972; Cohen & Brawer, 1982; Grubb, 1988, etc.)

Let us acknowledge, too, that the particular artifact of investigation, a transcript, contains limited information about what students themselves do in an institution. The transcript does not record extracurricular activities, or non-intellective aspects of maturation that we all hope result from participation in postsecondary education. Transcripts also tell us little about the environment of institutions (e.g. on community colleges, London, 1978), changing attitudes of students (e.g. in community colleges, deArmas & McDavis, 1981), or the comparative commitments of students to their institutions (Stage, 1988)--all of which influence student progress and attainment to various degrees.

In these contexts, however, transcripts provide a link between the status of individuals prior to postsecondary education and the status of individuals after postsecondary education. And we cannot ignore either pre- or post- status in assessing the meaning of academic records.

With all these conditions and caveats in mind, I propose that transcript archives can serve as grounds against which the validity of an institution's claimed mission with respect to its primary beneficiaries can be measured. I contend that the transcripts reflect individual choice behavior more than institutional functioning; but they also reflect an interaction between individuals and both the constraints and possibilities of the institution. The period during which the High School Class of 1972 received the bulk of its postsecondary education also offers external labor market and public policy explanations for student choice. But those "functionalist" issues (Doherty, 1987) do not arise in this analysis unless the primary empirical evidence of the transcript files suggests them.

IV. The Community College as Subject

Depending on what classification system one chooses, there are a number of types of postsecondary institutions. This inquiry could have picked any of them. I chose the community college because it was the "cleanest" category in all the well-known taxonomies. It was a box around which one could draw very definitive boundaries. When we aggregated institutional categories from the Carnegie classification to produce six institutional types, the community college (Carnegie Class 40) was the only discrete category that successfully resisted combination.

So, we are going to look at the records left by people who moved through this institutional "box" called the community college at various points in their lives between age 18 and age 30. In an inductive manner, and focusing on the primary beneficiary, I am asking who uses this type of institution, when (at what distance from high school graduation, for how long, in relation to attendance at other types of postsecondary institutions), what they study, what credentials they earn both from the community college and other institutions (and when), and what happens to them in the labor market. Along the way, I will be examining such variables as high school curriculum, general ability, educational aspirations and plans at age 18, and standard demographic factors (race, sex, SES, etc.).

Others have used the NLS surveys to analyze the careers of community college students (e.g. Anderson, 1981; Velez, 1985; Pascarella, 1986). But the difference between the survey and transcript data is so significant as to call such analyses into question. For example, Cohen (1988) says that only 825 NLS students enrolled directly in community colleges following high school graduation, i.e. in 1972, and Tinto (1987) says 815. I am not sure where either author obtained these figures, particularly as the First (1973) Follow-Up Survey shows 1135 students enrolled

in community colleges in October of 1972. The transcript data, however, show 1,996 students enrolling in community colleges at any time in 1972. To be sure, the snapshot of October is different from the wide-angle on the whole year, but if the universe is defined as "those who enrolled in community colleges directly following high school graduation," the wide-angle at least takes account of different graduation and enrollment dates. In any event, the differences in these figures are too great for comfort. As I noted before, transcripts may contain errors, but they neither exaggerate nor forget.

There are literally thousands of variables in the NLS archives, and hundreds more that we created by various aggregations, sortings, and labellings in the process of constructing our analysis files. Any selection of these variables involves implicit hypotheses about what may be important in explaining why people behave as they do. I confess to some obvious biases in this regard, e.g. the emphasis on educational aspirations/plans as potential determinants of educational attainment, or, more obviously, my construction and use of community college attendance pattern variables.

But even in these selections, my intent is to describe, not to predict, or to offer causal explanations. While the basic statistics I used inevitably involve estimation of populations ("inevitably" because the NLS cohort was a sample population, hence its behavior should be weighted in most cases), you will read no analyses of variance or other inferential statistics here. Those tasks are for others to undertake, and I hope this paper will stimulate them to do so. But I am neither a statistician nor social scientist. My job is to tell a story.

V. The Story Told by These Data

The Universes of the NLS/PETS

It's important at the outset to describe how the NLS/PETS sample can be delineated. There are at least six ways of doing so (see Table 1), and each yields a different universe. The universe one uses for a particular analysis depends on the question one is asking. For example, if we are looking at the curricular experience of the cohort, we should not include students whose participation in postsecondary education over 12 years was minimal--at least according to the records we received, or those students (314 in number) whose transcripts contained no course information whatsoever. But we will want to include those students for questions about what kinds of institutions they attended. In each of my analyses and tables, I indicate what universe is being used. The reader will note that two of the universes, C (the 12,599 students for whom at least one

transcript was received) and F (the 10,559 students with one or more transcripts received and 11 or more undergraduate credits earned), are used most frequently.

As Table 1 indicates, there are some basic demographic differences between those two universes, and that these difference are not, in the main, insignificant. Table 2 demonstrates that those students who earned 10 or fewer credits over 12 years included a higher percentage of Blacks, women, and people from the lowest rank in the SES trichotomy. This group consists of 2,008 people, 16.2% of Universe C. Half of these people attended community colleges and are classified, in the main, as "incidental" students. Their significance in understanding what the community college does as an institution, however, is hardly incidental.

Demographics and Attendance Patterns

The demographics of community college attendees can be illuminated considerably in the context of attendance patterns. For this paper, I have used six categories of attendance (for the final version, I will be using seven). These categories, and the weighted percentage of students in each, follow:

1) No community college attendance, at least according to transcripts received. Based on various evidence in their records, I estimate that 2% of the people in this group did, in fact, attend a community college, though as non-credit students. — 57.5%

2) Incidental students. Earned less than 10 credits from a community college; but may have earned another degree. In fact, 16% of these students earned a Bachelor's degree. — 4.1%

3) Non-Completers. Earned 10 or more credits from a community college, but never earned an Associate's degree. 14% of this group, however, received some kind of "certificate" from the community college, so "non-completer" may not be the most accurate term. In addition 14.6% of this group also attended 4-year institutions, and half of them earned more than 30 credits from those 4-year institutions. — 21.2%

4) Associates. Earned 10 or more credits from a community college and an Associate's degree from the community college, but earned no other degree from any other kind of institution (though they may have earned a certificate of some kind). The Associate's is the terminal degree for this group, though 22.3% also attended 4-year institutions, with two-thirds of that group earning 60 or more credits from those 4-year institutions. 8.9%

5) In-Process Transfers. Earned 10 or more credits from a community college (but no Associate's degree), and a Bachelor's degree from a 4-year institution. 4.2%

6) Step Transfers. Earned both an Associate's Degree from a community college and a Bachelor's degree from a 4-year institution. 4.2%

The reader will notice some exceptions to these classifications in Table 3 (Highest Degree Earned by Community College Attendance Pattern), most of which result from missing transcripts.

What do we see in the demographics of students who fit these various attendance categories? The following observations are based on Tables 4 and 5:

- Despite the greater ethnic diversity of the community college student population, Blacks are less likely to use the community college in their postsecondary education than either Whites or Hispanics. This is hardly a new observation (see Cohen, 1988). Yet somehow the popular mythology persists than a majority of black students attend community colleges. That simply was not true for the NLS/72 cohort. To repeat, but in a slightly different key: of all major ethnic groups, over time, and from a national perspective, Blacks are the least likely to attend community colleges.

- Hispanics are more likely than other groups to use the community college for incidental purposes, and less likely to earn any credentials from the community college. We can infer (see Table 6) that although more than a third of the Hispanics come from non-English-speaking households, this aspect of their background is not a major factor in non-completion rates. In fact, as Table 6 indicates, the highest

percentage of students from non-English speaking households who attended community colleges is found among the "in-process transfers," i.e. those who attended community college, did not receive an Associate's degree, but did go on to attain the B.A.

- o Whites are more likely than other groups to use the community college in its traditional transfer function, i.e. as a stepping stone to the B.A., whether or not an Associate's degree was earned along the way;

- o Women who attend community colleges are more likely than men to earn terminal Associate's degrees, and less likely than men to use the community college as a way station on the road to the Bachelor's degree.

- o Community colleges serve a higher proportion of students from low and (particularly) medium SES backgrounds than do other institutions. The most significant differential of this type is for average SES Whites.

- o In fact, in terms of SES, it is the medium-range student who attends the community college in a higher proportion than students from the other two categories in the SES trichotomy.

- o However, there is no question that the critical community college attendance category of non-completers houses a higher proportion of low SES students than any other attendance category. Even here, though, the difference between the percentage of low SES students among those who received terminal Associate's degrees (18.3%) and the non-completers (21.1%) is not overwhelming.

We can also infer, from the data in Table 2, that the category of community college attendees who earned fewer than 10 credits (Incidental Attendees) contains a higher proportion of Blacks in general, and low SES Blacks in particular, than is the case of students who earned more than 10 credits. The category also includes a higher proportion of low SES Whites. But this phenomenon does not hold for Hispanics.

Considered strictly as a demographic variable, the age at which this cohort attended community college must be inferred from first and last dates of attendance, and assuming an age of 18 in 1972. As Table 7 indicates, over half (52.6%) the community college attendees had come and gone before they were 22, but that 26.6% (and a slightly higher percentage of women) were enrolled

at some time between the ages of 25-30. It may very well be that community colleges serve much larger numbers of older students in non-credit, special or continuing education programs. But these students generally do not generate formal records. The NLS 5th Follow-Up provides survey data on school attendance and status through age 32 (as opposed to 30 on the transcripts), and it appears that approximately 30% of those who attended community colleges between the ages of 30 and 32 (1984-1986) were special students.

Time of Attendance

The last of the demographic observations leads us to consider the points in educational careers at which this cohort used the community college.

There are a number of ways to describe the time factor. The first is in terms of mean years enrolled, whether full or part time. These data are presented by highest degree earned in Table 8, and obviously do not represent the amount of time it took individuals to earn that degree. Nonetheless, the difference between the two measures is slight. So much should be evident by comparing the mean for Associate's degree holders (4.48 years) to the distribution of those degrees by year of receipt (see Table 9A). Approximately three-quarters of those who earned Associate's degrees did so within 4.5 years of graduation from high school.

A second way to consider the time spent by students in community colleges is to measure the gap between first and last enrollment, and to reflect on that gap in terms of the five modal attendance patterns. Unfortunately, over 30% of the cases lead to indeterminable measurements because of the poor quality of data on dates that were entered (or, more likely, not entered) on the transcripts. Nonetheless, as Table 10 indicates, the following observations hold:

- o Incidental attendees (earned less than 10 credits), do not attenuate their association with community colleges;
- o Non-completers (not surprisingly) are enrolled in community colleges over a greater span of time than any other attendance group;
- o Nearly half (47.5%) of those who enroll in community colleges are associated with that institution for less than 16 months.

A third way to think about the time factor is in terms of the date of entry either to postsecondary education in general or community colleges, in particular. As Knepper (1989) has

demonstrated, delayed entry does not affect the time it takes to earn a B.A.; but time-to-degree is different from level of attainment. The PETS data indicate that, even over a 12-year period, there is a direct correlation between when people enter community colleges and their ultimate educational attainment. In this respect, it bears noting, first, that only among "incidental" community college students do we find a significant percentage who delayed entry to postsecondary education by more than 27 months. This observation is borne out in Table 11, for which the calculations were restricted to those students with no missing transcripts, and in which the focus was on the first date of attendance in a community college.

In addition, students who were on active military duty at any time between 1972 and 1979 (6.5% of the sample) not only attended community colleges in higher proportions than the entire sample (55.8% v. 42.5%), but also--as one would expect--tended to delay entry to community colleges for 27 months or more after high school graduation, and to include a higher proportion of incidental and non-completer attendance patterns (see Table 12).

Two-thirds of all community college attendees entered postsecondary education (in any kind of institution), directly from high school, and 80% entered either directly or within 15 months of high school graduation. But as Table 13 shows, that percentage varies with attendance pattern, and in direct relationship to the level of degree(s) earned. This phenomenon suggests that students on the "transfer" tracks (in-process transfers and step transfers) had a fairly good idea when they were seniors in high school that they would transfer, hence did not unduly delay postsecondary entry.

The Role of Aspirations and Plans

Entry to postsecondary education in terms of both time and place involves many choices. Among the conditions and constraints on those choices are the student's own aspirations and plans for further education. Using the NLS surveys, Levin and Clowes (1980) offered a helpful analysis of the role of <u>aspirations</u> in this regard. But with reference to the transcript data, the distinction between aspirations and plans is more revealing,, and is presented in Table 14.

In the initial questionnaire administered to them as high school seniors, the NLS participants were asked two questions: "What is the highest level of education you would like to receive?" and "What is the highest level of education you plan to get?"[1] The differences in their responses to those questions are underscored by the actual attainment of this group 12 years later, as well as by the percentage in each category of

aspiration/plan who entered postsecondary education immediately following high school, i.e. who sought to actualize their aspirations/plans as early as possible.

An example of how to read Table 14 should enable us to understand the role of aspirations/plans somewhat better. In Table 14, Part 1, 28.7% of those who, in 1972, planned to earn a graduate degree wound up in 1984 with no degree whatsoever, while 19.9% actualized their plans and earned such a degree. Part 2 of the table indicates that an additional 4.7% aspired to a graduate degree and failed to earn any degree whatsoever, while 10.5% fewer students in this group realized their aspirations.

Aspirations, then, are far more unrealistic than plans (no surprise!). In addition, as Table 14 demonstrates:

- The higher the aspiration, the less likely it is to be fulfilled; and

- The higher the aspiration, the less likely students will enter postsecondary education directly from high school (thus rendering it less likely, still, that the aspiration will be fulfilled).

On the other hand, the more realistic the student's sense of his/her potential, the more likely he/she will enter postsecondary education directly from high school and realize an appropriate credential. The SAT scores of the PETS sample (see Table 17) provide further support for this observation: in all degree categories, the mean scores for plans are higher than those for aspirations, i.e. there is a better match. High school seniors are not oblivious to their own general learned abilities, and tend to ratchet down their aspirations accordingly, or so the data suggest.

The community college does not loom large in either the aspirations or plans of high school seniors. Indeed, only 8.5% of the cohort planned to earn the Associate's degree, the principal credential awarded by community colleges, as their highest credential. Another 8.2% planned postsecondary vocational or technical education, some of which would inevitably take place in a community college, but it is difficult to determine the extent to which high school seniors know that.

Not only is the benchmark credential of the Associate's degree comparatively invisible in the plans of high school seniors; it is also a weak force. That is, over time, and compared with the Bachelor's degree, very few people who initially plan to get an Associate's degree actually get it--even in 12 years: 24.7% versus 55.9% of those who planned the Bachelor's. Not only that,

but, as Table 15 shows, 21.2% of those who initially planned an Associate's degree never attended a community college at all, and another 11.4% were but incidental (fewer than 10 credits) attendees.

There is no question that using plans for an Associate's degree as a proxy for plans to attend community colleges has its limitations. It certainly doesn't help us account for who actually attends community colleges, whether they earn degrees or not. After all, 30% of those who planned the Bachelor's degree attended community colleges, and 30% of that group earned an Associate's degree. And nearly 60% of those who planned nothing more than a high school diploma wound up attending community colleges, with 15% of that group earning an Associate's degree.

But the point I wish to raise concerns the certifying function of community colleges in the educational career of this cohort. To what extent are Associate's degrees or certificates awarded by community colleges primary goals of students? To what extent are they consolation prizes? Are the credentials, in fact, relevant at all to the education of a generation? The transcript data strongly suggest that people attend community colleges principally for purposes that have little to do with earning credentials. The credentialling role of the community college is, in fact, a minor aspect of its mission.

Community colleges award "certificates" in addition to Associate's degrees. But only 4% of community college attendees received such certificates. The recipients tended to be white women who did not earn any other credential or degree, and the most common fields for certificates were secretarial (14.2%) and allied health/nursing (23.8%).

Attendees: Academic Background and General Ability

In order to analyze what the community college does for the people who attend (depending on how and when they attend) it is helpful to consider what those people bring to the community college in terms of previous education. For this task, the NLS archive provides us with high school transcripts, high school class rank, and a variety of ability measures.

In addition to providing baseline information against which to set community college course-taking patterns, general educational attainment, and basic labor market outcomes, these academic background variables, in fact, help explain and refine our analysis of community college attendance patterns.

For example, our previous analysis of "incidental" community college students suggest that they have comparatively low

educational aspirations/plans, and delay entry to postsecondary education more than other groups. We would think that they are thus of lower academic ability and orientation, and hence less likely to earn degrees of any kind (they obviously did not earn Associate's degrees).

But the data on high school academic background (see Table 16) and equated SAT/ACT scores (see Table 17) confound this inference. Incidental community college students have the second highest SAT/ACT scores among the six attendance categories and rank second in the study of foreign languages in high school (using 3 or more semesters as the measure). At the same time, however, they rank 4th in the study of both science and math in secondary school. When we consider that 12% of this group earned at least a Bachelor's degree and that half of those individuals attended community college before they attended any other kind of institution, a more complex notion of the "incidental" community college student begins to emerge. The data suggest that these students use the community college either (a) as a preparatory school, to fill in gaps in their previous education before going on to Bachelor's degree programs, or (b) as a vehicle for accelerating or augmenting their curricula in the Bachelor's program.

The "incidental" community college student who subsequently earns a degree higher than the Associate's presents a profile of secondary school academic background that looks very much like that of the "in-process transfer," i.e. the student who attends community colleges, earns a substantial number of credits but no Associate's degree, yet goes on to earn the Bachelor's. The difference between the two groups, in fact, is only that of the extent of education (in terms of both time and credits) and time of entry in the community college.

In terms of secondary school background, the weakest students are those who earn a substantial number of credits from the community college, but never a degree (though some, as previously noted, earn certificates). They ranked last in all six attendance group categories in terms of math, science, foreign language, and SAT/ACT scores. Did they fail to earn a degree because of poor academic performance in the community college? Table 18 strongly suggests not.

Since this "non-completer" attendance pattern covers the largest group of community college attendees, since the time-frame for completion was 12 years (a rather substantial period), and since common sense would indicate that financial aid is not a major cause of withdrawal from open-door commuter institutions with minimum tuition, we ought to inquire further into the correlates of non-completion.

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This inquiry will take us directly into the curricular experience of community college students. I propose that there are two distinct curricular patterns of those who attend community colleges, but earn no degree whatsoever. The first--and involving the largest group (about 75%)--is a pattern of coursework with no distinct focus. The second involves a sufficiently distinct course of study (usually occupational/vocational in nature) for students to take from that curricular experience what they think they need for the labor market. The formal credential is not a concern; the subject matter is. If this hypothesis holds, it will reinforce my previous contention that the credentialling function of the community college is not one of its principal missions.

Course-Taking: The Community College as Provider of Knowledge

Let us follow up this notion, first, by examining Table 19. The table compares the "majors" of <u>all</u> Associate's degree holders in the PETS (16% of whom did not earn the degree from a community college) with those of students in the "non-completer" attendance pattern category. The Associate's degree completers obviously include a large percentage (36%) who "majored" in general or traditional arts and sciences subjects. Given the fact that 1/3rd of the completers transferred to 4-year institutions <u>and</u> eventually earned a B.A., and that the general or traditional arts and sciences curricula are more likely to lead to B.A.s (see Table 28), that 36% is in line with expectations.

But among the "non-completers," and excluding those for whom the major was indeterminable, only 24% "majored" in general or traditional arts and sciences subjects. Among the rest, courses of study were dominated by occupational fields for which no license or degree is required, e.g. business administration, engineering technologies, office support occupations. Notice that Nursing (a licensure field) accounts for 7.6% of the Associate's degrees, but only 0.7% of the "major" fields of those with no degree (2.1% after adjusting for the "indeterminable" category).

This tendency to take from the community college that knowledge of immediate use in the workplace--and without regard to credentials--is illuminated by Table 20, which answers the following question: How much more likely were NLS/PETS students to take a particular course within an attendance pattern largely limited to community colleges versus an attendance pattern involving both community colleges and four-year colleges? To illustrate the reading of Table 20: a student who attended community colleges in either an incidental, non-completer, or terminal Associate's degree pattern is nearly 6 times as likely

for which the lists differ follow from the academic background characteristics of students in the two blocks of attendance patterns, as well as from our previous notion of "workplace utility" (which, as I will note when we come to consider the labor market outcomes of community college attendance, may not be as useful as students thought when they took the courses):

Community College Only	Comm. Coll. and 4-Yr. Coll.
Nursing: General	English Literature
Stenography	Developmental Psychology
Pre-College Algebra	American Literature
Anatomy & Physiology	Organic Chemistry
Secretarial: General	Statistics (Math)
Intro. to Bus. Admin.	Physical Science: General
Aircraft Mechanics	Philosophy: Gen., Intro.
Business Math: Arith.	Zoology: General, Intro.
Technical Math	Elem./Intermed. French
Personal Health: Gen.	Physical Education (Educ.)
Electronics Technology	Bible Studies
Remedial Reading	Educational Psychology
Data Processing	Finance

Given the previously-noted, comparatively poor secondary school mathematics background of community college attendees in the non-completer and terminal Associate's categories, it is not surprising to see the heavy representation of pre-collegiate mathematics in their curricular experience. Community college programs for this generation evidently insisted on both remediation and on mathematics prerequisites for their major occupationally-oriented programs.

Nor is it surprising that, of the remaining 10 courses in the left-hand column, 7 are from occupational curricula. I include "Anatomy and Physiology" in this group as, in our revised CIP taxonomy, "Anatomy & Physiology" is recognized as a clinically-oriented service course independent of "Anatomy," on the one hand, and "Physiology," on the other. A&P is taken far more by students in community colleges and comprehensive 4-year colleges than any other type of institution, and principally by Nursing or Allied Health majors.

The Concept of "Principal Provider"

The issue at this point in our discussion boils down to the question of what type of institution is the "principal provider" of a given curricular content to this generation of postsecondary students. The question is important from a labor market perspective because if we assume that what I call the "knowledge-content of work" is determined by the learning people bring to

the workplace, we can (a) identify those dysfunctions in workforce preparedness that can be traced to prior education, hence, target our educational improvement efforts more precisely, and (b) better match exiting college and community college students to the labor market by referring to what they studied. If we need X, we will know better which type of institution is the principal provider; and if we need a better X, we will know which provider to target for improvement efforts.

Of what kinds of knowledge, within fields, is the community college the principal provider to our economy and society? Table 22 attempts to explore an approach to this question through the concept of enrollment differentials. It takes a series of sets of illustrative fields, and demonstrates those courses typically offered by both 2-year and 4-year colleges in which total enrollments were dominated by the community college. For each course, a contrasting case is offered, another course in that general field for which the community college is not the principal provider. For example, if one were looking for a technical writer, one would more likely turn to the universe of community college students than one would if the job involved creative writing. Likewise for real estate agents as opposed to insurance agents; child care specialists as opposed to family relations counselors, etc.

Not all courses, to be sure, are so occupationally specific. Some, however, are tied to occupational curricula, e.g. Engineering Physics to the Engineering Technologies programs offered in community colleges versus the Engineering Mechanics normally taken by Engineering majors in 4-year colleges. But within traditional arts and sciences courses, the community college is a principal player only at the introductory/general level.

One interesting feature of this list in terms of labor market outcomes for the NLS/72 generation, is that of the 25 illustrative courses for which the community college is the principal provider, ten (40%) require the student to work principally with ideas (as opposed to working with people, paper, or things): American Studies, Hispanic-American Studies, Business Law, Anatomy and Physiology, Pre-Collegiate Algebra, Introductory Philosophy, Physical Anthropology, U.S. History, Sociology of Deviance, and General Physical Science. The "contrasting case" list includes 17 courses (68%) in which the student is required to work principally with ideas.

Assuming this list is reasonably representative, one could conclude that the community college was not the principal provider of skills based on working with ideas to this generation. To be sure, ideas are involved in courses

emphasizing working with people (Occupational Therapy), working with paper (Real Estate), and working with things (Photography). Indeed, nearly all courses draw, in different degrees, on all four aspects of workplace skills and life capacities. But ideas are central to higher education, and their importance in the workplace to this generation was rather significant, as we will now consider.

Labor Market Outcomes: the Emphases of Work

What happened in the labor market to those students from the High School Class of 1972 who attended community colleges? Given the very rich data on the 5th (1986) follow-up survey of the NLS, there are many ways to approach the question, and many labor market variables upon which we could draw (earnings, unemployment, industry, etc.) In fact, for each individual, we could construct a labor market history; and for the 7095 individuals who are in both the Postsecondary Transcript Sample and the 5th Follow-Up (FU5), generate analyses of relationships between curricular experience and that labor market history. Indeed, Archives of a Generation will contain a number of essays using this approach, along with the necessary inferential statistics.

For purposes of this presentation, however, I want to focus on a single point in time: labor market status in 1986, and introduce the reader to the possibilities of the data by focusing on one connection between curricular experience and work.

First, let us note the general distribution of occupations held by NLS community college attendees in 1986, presented by attendance pattern (Table 23). "Occupation," to be sure, is not a very informative category of analysis, since what people actually do on the job is more important to our understanding of the relationship between education and work than what people call themselves. Nonetheless, and despite the slipperiness of some occupational categories (e.g. "Managers"), Table 23 not only provides some basic parameters, but also lends strength to some of the analyses above.

As the reader will recall, those who earn no degrees from community colleges tend to pick away at courses that are very occupationally-specific and not subject to credentialling (e.g. through licensure) and that call less on individuals' abilities to deal with ideas than with people, paper, or things. So much should be evident from the comparative proportion of individuals in this category who worked in office support, clerical, operative, or crafts roles in 1986. The contrast between this group and those who earned both the Associate's and the Bachelor's degrees are particularly keen.

But the most interesting group in terms of the overall topic of this paper are the terminal Associate's degree holders. Even though credentialling may not be one of the principal roles of the community college, and the Associate's degree a weak force in the aspirations and plans of students, that degree, nonetheless, is the benchmark credential for the institutional type. Furthermore, we can be sure that people who earned an Associate's degree from a community college experienced as full a range of community college curricula as the benchmark 60-credits allows (though, as TABLE---demonstrates, a majority of terminal Associate's degree holders earn more than 60 credits from community colleges). In other words, this group had maximum exposure to the principal provider of its postsecondary education, and without major contamination of curricular experience at another type of institution.

For each of their four most recent jobs, the 1986 survey (FU5) asked NLS respondents the degree to which they worked with ideas, people, paper, and things. Table 24 presents the responses, by major course of study, of 910 Associate's degree recipients who were in the college transcript sample and who claimed they worked "a great deal" in each of those four categories. Most of the responses fit common sense empiricism. On the assumption that they are working in the general area of their community college concentration, majors in "Protective Services" need to work almost as much with the law (ideas) and the paper endemic to the criminal justice system as they do with people. Those in business support services work far more with people and paper than with ideas and things. Those in technical fields work less with paper than they do with ideas, people, and things. There thus appears to be a general match between curriculum and work role.

In terms of aggregate rankings, respondents worked mostly with people, followed by paper, ideas, and things, with the spread between people and paper (ranked 2nd) being 20.5%. These aggregate rankings well reflect the overall role of ideas in the community college curriculum.

But what happens if we focus the same four questions only on those who said (in the FU5 survey) that their postsecondary education was "very relevant" to their work? Notice that only 16.2% of those who received Associate's degrees from community colleges answered that question in the affirmative. Such a response begins to hint that the match between curriculum and work role may not be so felicitous.

What happens is that the proportion of those who work "a great deal" with <u>ideas</u> jumps 20.6%, while increases in the other three

categories are much smaller. "Ideas" replaces "paper" in the second slot of this ranking, and the spread between "people" and "ideas" narrows to 6.6%.

What this variation says is that a community college curriculum dominated by ideas is far more occupationally-relevant, has far more actual "workplace utility," than the curriculum experienced by the mass of those who study in community colleges. In fact, the proportion of Associate's degree recipients for whom education was very relevant to work and who worked a great deal with ideas is higher than that for Bachelor's degree recipients who never attended a community college (65.9% v. 63%).

Community College Attendance and the Bachelor's Degree

Some 8.9% of those in the High School Class of 1972 who entered postsecondary education both attended a community college and earned a Bachelor's degree. Half of this group also earned an Associate's degree. An additional 6.0% attended both community colleges and 4-year institutions without earning a Bachelor's degree (though a third of them earned the Associate's). Thus, irrespective of credentials earned, one out of every seven students attended both types of institutions.

By tradition, mass marketing, and popular perception, the Bachelor's degree is the most fundamental benchmark of attainment in education after high school. We saw that fact very clearly in our consideration of the aspirations and plans of high school seniors. Unlike the Associate's degree, the Bachelor's has high imagibility.

The topic of the relationship between community college attendance and Bachelor's degree attainment has been at the center of the literature on community colleges, debates on community college mission, and state higher education system planning for nearly 30 years. The more heated versions of the topic are found in debates about the role of educational institutions in social stratification (e.g. Clark, 1960; Clark, 1962; Zwerling and Park, 1974; Zwerling, 1976; Karabel and Halsey, 1977). The cooler versions focus on the experiences of the students involved, and often employ ethnographic methods, (e.g. Neumann and Riesman, 1980). It's difficult to avoid the topic, and even more difficult if one's archives consist principally of student records.

For the sake of this history, let us consider the relevant features and evidence of the transcript data on which we have not touched. Basically, these data confirm previous analyses and impressions, but add what I obviously believe to be the critical variable of attendance pattern.

Tables 25 and 26 deal with the phenomena of sequence for those who attended both community colleges and 4-year colleges. We can infer from Table 25 that in only 24.6% of the cases did the student attend the 4-year institution before the community college. These are the cases in which the date of first attendance in a community college was later than the date of first entry into postsecondary education. To be sure, the community college student may have attended a proprietary school or specialized institution first, but the data strongly suggest that the overwhelming number of cases here are 4-year colleges.

Table 26 looks at the sequence question only for those who earned Bachelor's degrees. For the vast majority of these cases, the community college was the institution of first attendance. In other words, in very few cases in this cohort did students attend a community college after they earned the Bachelor's degree. And those cases are dominated by students in the "incidental" category. These students seem to use the community college as a local provider of adult/continuing education.

Table 27 documents an ancient discussion about the influence of community college attendance on the length of time it takes to earn a Bachelor's degree. Part 1 of the table sets the comparative background of time-to-degree for all Bachelor's degree recipients.[2] Part 2 introduces the attendance pattern variable to the traditional analysis of time-to-degree for those who attended community colleges. It is obvious that those who do not take the time and credits to finish an Associate's degree in the community college earn their B.A.'s faster than those who do. So if you aspire or plan to earn the Bachelor's degree and start out in a community college, there is no need to wait for the Associate's degree before you transfer.

There are at least two aspects of the relationship between community college and four-year college attendance that the transcript data allow us to analyze that, to the best of my knowledge, have not been documented elsewhere. The first involves those students who earned an Associate's degree, transferred to a four-year college and did not subsequently earn the B.A. Tinto (1987) calls them "Transfers: Four-Year: Dropouts," but because he uses the NLS survey data, his analysis cannot pick up institutional type. The transcript data show that a third of these students transferred to research universities, fourty-four percent to comprehensive colleges, and seven percentage to liberal arts colleges. Within these transfer patterns, there was a rather significant difference by race. Of those who transferred to research universities, 90.8% were white, whereas of those who transferred to liberal arts colleges, 38.1% were black. These anomalies do not exist among those who transferred to comprehensive colleges.

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I suspect that the high percentage of Blacks transferring to liberal arts colleges occurred principally in Southern states, and that the liberal arts colleges at issue were principally historically black institutions. With a little work, the PETS data can answer the question, along with the more general question of the geographical and state-system factors involved in both successful, i.e. resulting in a B.A., and unsuccessful transfer.

Second, table 28 indicates the broad community college "majors" of those who earned B.A.s versus those who earned the Associate's degree (from a community college) only. Nearly two-thirds of the A.A./B.A. students (versus less than one-third of the A.A. only students) "majored" in either arts and sciences or general studies in the community college. But what of the Bachelor's degree majors of the A.A./B.A. students? The distribution of these majors differs somewhat from those of other Bachelor's degree recipients (see Table 29), but differences by race are more significant. The reader will notice a higher percentage of B.A.s for the transfer students in business administration (18.4% v. 15.7%), in Education (18.4% v. 16.0%), and in a collection of fields (including communications, home economics, protective services, public administration, social work) we call "applied social sciences" (9.0% v. 7.8%). But both Blacks and Hispanics are overrepresented (and these are weighted figures) in social sciences and applied social sciences; and Blacks are again overrepresented in Education. The major thrust of the juxtaposition of majors at both A.A. and B.A. levels, though, is that the traditional "transfer track" in the community college leads more to Bachelor's degree majors in the social sciences, applied social sciences, and social science professions than anywhere else.

VI. The Story and the Mission

However incomplete it may be, what does this story tell us about the mission of the community college in the lives of a generation?

First, the institution seems to function in a variety of what I would call "occasional" roles. In a more common phrasing, it serves individuals for *ad hoc* purposes. An institution capable of doing so must be very flexible, tractable, and penetrable. That doesn't mean that the institution is friendly, efficient, or effective. It does not mean that the institution provides quality instruction or guidance or that it keeps its promises to students. It simply means that the institution easily accomodates a variety of decisions to engage in intentional learning within a formal organization.

The students whose records we see in this archive are adults, and their choices to use a particular institution for a particular purpose at a particular time in their lives are intentional. What the community college does is to canonize and formalize the many decisions we make as adults to engage in learning for either limited, highly focused purposes or for general purposes.

A second version of this theme (and it is qualitatively different from the first) is that the community college functions as an intermediary institution: a way-station or stepping stone or gap-filler for individuals in transit from one status to another, e.g. adolescent student to labor market adult, working adolescent to adult student, etc. The universes of the labor market and baccalaureate education, however complex, have far more definite boundaries, rules, and expectations in the lives of individuals than does the community college. People know that the community college will do something for them, will help them get from here to there. Even if they are constrained by geography, family circustances, poor academic preparation, or socioeconomic status, they seem to make of the community college what they want to make of it. They use the institution for a time, and then move on.

A third version of this theme casts the community college in the role of "testing ground." That is, the institution provides individuals with the chance to test their tolerance for and interest in postsecondary education. More than half of those whose educational aspirations as high school seniors were limited to the high school diploma eventually attended community colleges. We can infer from Table 15, Part 2, that a third of those people decided that postsecondary education was not for them, though one-sixth of those people eventually earned a degree of some kind.

From their days as seniors in high school through age 30, the community college functioned in the lives of NLS students with a comparatively low degree of imagibility, resulting from its minimal role in credentialling and from the amorphous nature of the Associate's degree. For some students, particularly those whose Associate degree "majors" can be described only as "General Studies" or "Liberal Arts and Sciences," the Associate's degree is but an advanced high school diploma, serving as a warrantee, so to speak, of general learning. There is nothing wrong with that. In fact, given the well-documented decline of the quality of learning in U.S. secondary schools, such programs are necessary, and the community college is one of their principal providers.

The second major theme concerns the populations served by the community college. Given its occasional roles, minimal costs, and ease of access, the community college, by its very nature,

can reach a broader spectrum of American society than other types of postsecondary institutions. This reach is augmented by the sheer number and geographical distribution of community colleges. Yet for that very same reason, the community college inevitably will serve the majority more than minorities. Outside the South and parts of the Southwest, for example, rural America is white America, and the principal postsecondary presence in rural areas is either the community college or the state college. With a little more work, I believe the NLS data can demonstrate an old rule of elasticity of supply: when the only provider is X, X provides to (a) the dominant ethnic population, and (b) to students of all ages, and the older student is more likely to wind up in X than Y (which doesn't exist). So if the community college, considered nationally, serves an older population (as well as a younger one), it is the result of elementary economics. For the same reasons, the community college winds up serving a higher proportion of white and Hispanic students than black students. We also know that rural populations are more likely to be classified in the low and moderate SES ranges than metropolitan populations. So for those who select postsecondary institutions on the basis of proximity, as many students do (Astin, et al, 1986), community colleges will inevitably be the principal providers, hence will wind up serving a higher proportion of low and moderate SES students than will other types of institutions.

A third major theme concerns the community college curriculum selected by students. We can infer what the community college offers from what students take; what it seems to offer is a combination of specialized curricula in three major occupational fields: allied health, business and business support services, and engineering technologies, and general studies curricula dominated by the social sciences. Students interested principally in either the sciences or the humanities either do not attend community colleges at all or transfer very quickly. Common sense empiricism would conclude that there is no way these institutions could offer quality curricula in the basic sciences or enough depth in the humanities to reach the "trapgates" of the fields. The transcripts confirm such a hypothesis.

NOTES

1. The versions of these questions used in the High School and Beyond longitudinal studies of the classes of 1980 and 1982 were unfortunately not parallel, but more revealing. Instead of "What level of education would you like to get?," HSB respondents were asked, "With What Level of Education Would You Be Satisfied?" Juxtaposed with the question on actual educational plans, HSB allows us to determine who would be satisfied with less than they

actually plan to get, i.e. who is an "unwilling attendee" in higher education. Some 18% of the HSB Seniors can be so classified.

2. I should add that this rendering is about the most accurate available for this and/or any other generation of college students. Attempts to impute time-to-degree for the High School and Beyond cohorts on the basis of 5 years or less of transcript data, and to compare the distribution to that imputation to the NLS cohort, simply will not wash. Besides, the HSB transcripts have not undergone the same meticulous cleaning of date entries as was done for the NLS/PETS.

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Table 1

BASIC WEIGHTED DEMOGRAPHIC FEATURES OF THE NLS/PETS SAMPLE: BY ANALYSIS CATEGORIES

		Male	Female	All	Low SES
Category A: NLS Base Year					
N=22,652					
	White/Asian/Oth	45.5%	42.0%	87.5%	
	Black	3.6	5.2	8.8	
	Hispanic/AmInd	1.9	1.8	3.7	
Category B: All PETS					
N=13,828					
	White/Asian/Oth	45.6	42.1%	87.7	12.1%
	Black	3.5	5.1	8.6	53.5
	Hispanic/AmInd	1.9	1.8	3.7	53.6
Category C: 1+ Transcripts					
N=12,599					
	White/Asian/Oth	45.5	42.0	87.5	12.1%
	Black	3.6	5.2	8.8	53.5
	Hispanic/AmInd	1.9	1.8	3.7	53.6
Category D: 1+ Transcripts and No Transcripts Missing					
N=10,103					
	White/Asian/Oth	46.6	41.1	87.7	
	Black	3.5	4.9	8.4	
	Hispanic/AmInd	2.1	1.8	3.9	
Category E: 1+ Transcripts and Course/Credit Data					
N=12,285					
	White/Asian/Oth	45.6	42.1	87.7	
	Black	3.5	5.1	8.6	
	Hispanic/AmInd	1.9	1.8	3.7	
Category F: 1+ Transcripts and More than 10 Creds. Prior to B.A.*					
N=10,559					
	White/Asian/Oth	46.4	42.1	88.5	10.8
	Black	3.1	4.9	8.0	50.9
	Hispanic/AmInd	1.9	1.6	3.5	53.9
Category G: 1+ Transcripts, More Than 10 Credits Earned, and No Missing Transcripts					
N= 8,549					
	White/Asian/Oth	47.4	41.2	88.6	
	Black	3.0	4.7	7.7	
	Hispanic/AmInd	2.0	1.7	3.7	

*Category covers highest degree if either < B.A., or no degree.

Table 2

CHARACTERISTICS of NLS/PETS STUDENTS WHO EARNED 10 or FEWER CREDITS BETWEEN 1972 and 1984
(weighted; N=2008)

	Earned <11 cred	Earned >10 cred
RACE x SEX		
White/Asian/Oth	82.6%	88.5%
Black	12.6	8.0
Hispanic/AmInd	4.8	3.5
Men	49.5	
Women	50.5	
Men: White/Asian/Oth	41.2	46.4
Men: Black	6.1	3.1
Men: Hispanic/AmInd	4.5	2.1
Women: White/Asian/Oth	41.4	42.1
Women: Black	6.5	4.9
Women: Hispanic/AmInd	2.6	1.6
SES TRICHOT x RACE		
Low: White/Asian/Oth	19.5	10.8
Low: Black	62.1	50.9
Low: Hispanic/AmInd	51.9	53.9
Med: White/Asian/Oth	57.7	
Med: Black	30.5	
Med: Hispanic/AmInd	37.6	
High: White/Asian/Oth	21.2	
High: Black	4.9	
High: Hispanic/Amind	10.0	
HIGHEST DEGREE: (unweighted)		
None	91.4	
Certif. or License	7.6	
Associate	0.7*	
Bachelor's and Higher	0.3*	
COMMUNITY COLLEGE ATTENDANCE: (unweighted)		
None	50.3	
Incidental	48.5	
Subst., but no degree	1.1*	

* These cases obviously involve missing transcripts.

Table 3

HIGHEST DEGREE EARNED x COMMUNITY COLL. ATTENDANCE PATTERN:
High School Class of 1972, Transcripts through 1984
(weighted)

IF: Number of transcripts was 1+ and total credits earned were 11 or more. N=10,559.

	None	Incid.	>10 Crds, No Degr.	Assoc. Degree Only	No Assoc But B.A.	Assoc + B.A	TOT
No Degree	46.4%	4.0%	49.6%	----	----	----	38.9%
Certif:	48.3	3.2	48.5	----	----	----	3.6
Assoc.	13.5	1.0	-----	85.6%	----	----	10.3
Bachelor's	75.7	4.9	-----	----	9.8%	9.7%	38.5
Master's	79.8	6.0	1.1*	0.6*	5.0	7.4	6.3
Doc/1st Pr.	88.9	2.0	2.0*	0.3*	4.5	2.6	2.4
TOT. ATTEND. PATTERN:	57.5%	4.1%	21.2%	8.9%	4.2%	4.2%	

* In these cases, we are obviously missing the Bachelor's degree transcript.

Table 4

BASIC DEMOGRAPHY OF COMMUNITY COLLEGE ATTENDANCE PATTERNS
(weighted)

IF: At least one transcript received (N=12,599)

	White	Black	Hisp.	Male	Female	All
CC Attendance:						
None	56.3%	59.5%	41.4%	56.7%	55.3%	56.0%
Incidental	9.5	10.1	13.4	8.9	10.5	9.7
Subst., No Degree	17.1	20.2	30.6	18.1	17.6	17.9
Associate's only	9.1	6.0	9.3	7.9	9.8	8.8
Subst., BA from 4 yr.	3.6	2.7	2.2	3.8	3.1	3.5
AA from CC + BA	4.5	1.6	3.1	4.6	3.7	4.2

Table 5

SES and COMMUNITY COLLEGE ATTENDANCE THROUGH 1984:
High School Class of 1972
(weighted)

IF: more than one transcript received.

SES TRICHOT:	LOW	MED	HIGH	UNKNOWN
Total NLS PETS (12,599)	17.3%	47.0%	34.8%	1.0%
Never Attended CC	16.4	43.3	39.3	1.0
All CC Attendees	18.5	52.0	28.5	1.0
All Black CC Attendees	54.2	37.2	6.4	2.2
[All Blacks in PETS Sample	53.5	36.7	8.2	1.6]
All Hispanic CC Attendees	52.5	37.0	10.2	0.3
[All Hispanics in PETS	53.6	36.0	10.1	0.3]
All White CC Attendees	13.1	54.2	31.7	1.0
[All Whites in PETS	12.1	48.4	38.4	1.0]
By Type of CC Attendance:				
Incidental	18.5	51.5	28.9	1.1
Substantial, No Degree	21.2	52.5	25.2	1.2
Terminal Assoc. Deg. from CC	18.3	55.4	25.4	0.9
Substant, No Assoc., but BA	13.2	45.8	40.9	0.2
Assoc from CC + BA	10.2	49.9	38.6	1.4

Table 6

STUDENTS FROM NON-ENGLISH-SPEAKING HOUSEHOLDS in the NLS/PETS

IF: One or more transcripts received.
(N=12,599)

	Weighted %	N
Total in Sample:	7.1%	940
Hispanic/AmInd	1.3	199
Black	0.6	92
White/Asian/Oth	5.3	649
By Ethnic Subgroup:		
Hispanic	34.8	
Black	6.4	
White/Asian/Oth	6.0	
By Comm. Coll. Attendance		
None	6.9	
Incidental	7.9	
Subst., but no Degree	7.6	
AA from CC, only	6.3	
No AA, but BA from 4-yr	8.7	
AA from CC + BA from 4-yr	6.4	

Table 7

AGE IN YEAR OF LAST ATTENDANCE AT COMMUNITY COLLEGE FOR THE HIGH SCHOOL CLASS OF 1972, THROUGH 1984

Known Cases Only; N=4145

	MEN	WOMEN	ALL
18 (1972)	6.5%	5.9%	6.2%
19 (1973)	14.6	17.1	15.7
20 (1974)	20.3	19.6	20.0
21 (1975)	11.5	9.9	10.7
22 (1976)	8.7	7.6	8.2
23/24 (1977-78)	13.8	15.9	14.8
25/26 (1979-80)	10.5	12.7	11.5
27-30 (1981-84)	14.1	16.1	15.1

Table 8

TOTAL TIME SPENT IN POSTSECONDARY EDUCATION TO 1984
by the High School Class of 1972
(in years; weighted)

IF: If one or more transcripts received, and calculable termdates totalling one month or more. (N=11,159)

	Mean	S.D.	St.Err.	Max	N
All	4.52	2.97	0.028	12.50	11,159
Men	4.58	2.93	0.039	12.50	5,807
Women	4.45	3.01	0.041	12.50	5,352
White/Asian/Oth	4.55	2.97	0.031	12.50	9,416
Black	4.16	2.87	0.081	12.42	1,257
Hispanic/AmInd	4.40	3.23	0.147	12.33	486
By Highest Degree:					
None	3.44	3.01	0.044	12.25	4,788
Certificate	3.17	2.89	0.162	12.25	318
Associate's Deg.	4.48	3.09	0.095	12.42	1,051
Bachelor's	5.26	2.34	0.037	12.42	4,085
Master's	7.40	2.31	0.090	12.50	656
Doct/1st Prof.	6.84	2.15	0.135	11.83	254

Table 9

TIME AND THE ASSOCIATE'S DEGREE
for the High School Class of 1972

IF: One or more transcripts and 11 or more earned credits.

I. Year of Associate's Degree

	<1974	1974	1975	1976	1977-8	1979-80	1981-4	N
Number:	17	686	280	180	177	122	118	1580
Weight %	0.9%	44.9%	17.8%	10.8%	10.9%	7.2%	7.4%	

II. Total Time Spent in Postsecondary Education by Those Whose Highest Degree was the Associate's, Who Earned 60 or more Credits, and for whom No Transcripts were Missing (in months)

	<15	16-27	28-39	40-51	52-65	66-75	76-99	100+
Number								
Weight %	3.3%	5.2%	17.3%	19.7%	12.1%	10.2%	15.9%	16.2%

Table 10

TIME BETWEEN FIRST AND LAST ENROLLMENT IN COMMUNITY COLLEGES THROUGH 1984 by CC ATTENDANCE TYPE:
High School Class of 1972
(Weighted)

IF: Attended community college at any time (N=5355)

Attendance Type*: Time		1	2	3	4	5	N
Indeterminable	(28.9%)	23.4%	26.1%	16.3%	16.0%	18.3%	1444
< 6 months	(20.6%)	49.2	43.1	2.8	3.3	1.3	1158
6-15 months	(14.6%)	14.9	48.3	21.9	7.8	7.1	810
16-27 months	(12.0%)	9.7	41.3	31.5	5.5	12.1	669
28-39 months	(5.8%)	10.4	51.7	27.3	4.6	6.0	331
40-51 months	(3.8%)	11.4	51.0	25.6	7.0	5.0	223
52-65 months	(3.2%)	11.9	53.0	24.4	5.5	5.2	186
66-75 months	(2.4%)	7.5	59.0	23.8	4.5	5.2	143
76-99 months	(4.4%)	11.0	49.5	23.3	5.6	10.7	239
100-123 months	(2.8%)	6.4	51.0	33.9	5.1	3.7	152
10-12 years	(1.6%)	8.6	58.8	22.4	4.7	5.5	87

*Attendance type: 1=Incidental; 2=substantial, but no degree; 3=Assoc. Degree from CC, terminal; 4=no degree from CC but a B.A. from a 4-year college; 5=both Assoc. Degree from CC and a B.A. from a 4-year college.

Table 11

YEAR OF FIRST ATTENDANCE AT A COMMUNITY COLLEGE
by COMMUNITY COLLEGE ATTENDANCE PATTERN
(weighted)

IF: One or more transcripts received and community college attendance. No missing cases (N=4005).

	Community College Attendance Pattern					
	1	2	3	4	5	Total
Year of 1st Attend.						
1972	5.6%	25.1%	12.2%	3.2%	4.5%	50.5
1973	3.8	6.8	2.2	0.9	0.5	14.3
1974	3.3	3.7	1.5	0.4	0.3	9.0
1975	1.8	2.4	0.7	0.2	0.3	5.4
1976	2.1	2.6	0.8	0.2	0.1	5.7
1977-78	3.0	4.0	1.2	0.2	0.1	8.6
1979-80	2.4	2.2	0.3	0.3	0.1	5.2
1981-84	0.5	0.3	---	---	---	0.8
Indeterminable	---	0.4	0.1	---	---	0.5

Table 12

ACTIVE MILITARY DUTY AND COMMUNITY COLLEGE ATTENDANCE

If: At least one transcript received, and student was on active military duty at any time between 1972 and 1976 (N=867 or an unweighted 6.9% of the NLS/PETS universe)

Part I: Community College Attendance Pattern, by Race (weighted)

	White, etc.	Black	Hispan/AmInd	All
None	43.9%	49.1%	34.8%	44.2%
Incidental	13.0	17.3	9.3	13.4
Non-Completers	27.4	21.9	38.0	27.1
Associate's	9.7	9.9	6.0	9.5
In-Process Tr.	2.0	1.5	3.5	2.0
Step Transfers	4.1	---	8.6	3.7

Part II: Attendance Pattern, by Year of First CC Attendance

	Incid.	Non-Complet.	Assoc.	Process Tr.	Step Tr.
Missing	14.9%	15.5%	19.5%	58.8%	55.1%
1972	13.2	19.3	15.6	5.9	13.8
1973	7.1	5.3	3.8	---	6.9
1974	14.0	4.6	6.5	---	6.9
1975	7.9	10.5	14.3	17.7	13.8
1976	14.0	14.2	11.7	17.7	3.5
1977/78	17.5	17.6	22.1	---	---
1978/80	10.5	11.3	5.2	---	---
1981/84	0.9	1.7	1.3	---	---

Table 13

POSTSECONDARY ENTRY PATTERN by
COMMUNITY COLLEGE ATTENDANCE PATTERN
(weighted)

	Delayed Entry (in Months)					
	No Delay	6-15	16-27	28-51	52+	Indet
CC Attendance:						
Incidental	50.1%	13.2%	8.7%	13.0%	15.1%	--
Subst., No Degree	63.8	12.4	6.3	8.8	7.9	0.7
Assoc. Deg. from CC	75.1	9.4	5.0	5.4	4.9	0.3
Subst. + BA	87.0	8.3	2.6	1.9	0.1	---
Assoc from CC + BA	88.0	7.2	2.2	2.6	---	---

Table 14

HIGHEST DEGREE EARNED by 1984 x EDUCATIONAL PLANS in 1972

(with percentage entering postsecondary education directly after high school)

	None	Assoc	Bach	Grad	% No Delay	N
EDUC PLANS						
Missing	53.8%	8.5%	24.2%	5.5%	65.9%	4976
High School Only	75.1	9.3	7.1	1.6	18.9	366
Voc/Tech Only	65.1	11.9	6.8	0.9	42.6	908
Associate's	61.3	19.8	12.8	1.1	69.3	1016
Bachelor's	36.5	6.0	47.2	8.7	83.7	3864
Graduate	28.7	4.4	45.8	19.9	84.5	1390

THE ABOVE TABLE RECAST TO ILLUSTRATE DIFFERENTIALS BETWEEN EDUCATIONAL ASPIRATIONS and EDUCATIONAL PLANS

						N for ASPIR
Missing	(0.2)	(0.3)	3.9	0.1	0.3	5489
High School Only	3.5	(1.6)	(2.0)	1.8	17.0	117
Voc/Tech Only	(1.7)	3.7	0.6	(0.3)	(2.9)	667
Associates	0.8	(0.1)	(4.7)	0.2	(9.8)	457
Bachelors	10.6	3.4	(10.5)	(4.5)	(8.1)	2379
Graduate	4.7	0.8	(0.4)	(10.5)	(2.3)	3463

Table 15

EFFECTS OF EDUCATIONAL PLANS:

Part 1: Highest Degree Earned by 1984 by Those Who Planned the Associate's Degree as Their Highest Degree in 1972 (weighted; N=12,599)

	White	Black	Hispan.	ALL
No Degree	59.3%	69.8%	78.1%	60.7%
Certificate	5.2	6.2	4.8	5.2
Associate's	21.1	11.0	8.9	20.0
Bachelor's	13.0	11.9	8.2	12.7
Master's	1.1	1.0	---	1.1
Doct/1st Prof.	0.2	---	---	0.2

Part 2: Community College Attendance Patterns through 1984 by Educational Plans in 1972 (weighted; N=12,599)

	Community College Attendance Patterns*						
	0	1	2	3	4	5	Tot.
Highest Ed Planned							
Unknown	54.3%	11.2%	19.8%	7.6%	3.4%	3.7%	37.3%
Less than H.S.	52.2	16.0	24.5	3.6	3.8	----	0.6
H.S. Grad Only	41.1	19.6	28.8	8.5	0.6	1.4	3.1
Voc/Tech Post-Sec	49.7	12.7	26.1	8.6	1.7	1.2	8.2
Associate's Degree	21.2	11.4	39.4	18.4	3.4	6.3	8.5
Bachelor's Degree	70.1	7.2	10.0	5.1	3.9	3.7	31.3
Graduate Degree	75.4	6.0	7.3	3.8	4.6	2.8	11.0

* 0=None; 1=Indicental; 2=Substantial, but no degree of any kind; 3=Associate's from community college and no other degree; 4=Substantial, no degree from comm. college, but B.A. from 4-year college; 5=Assoc. from comm. college and B.A.

Table 16

HIGH SCHOOL CURRICULA OF COMMUNITY COLLEGE ATTENDEES
of the HIGH SCHOOL CLASS OF 1972:
by CC Attendance Type through 1984
(weighted)

HS Semesters:	0	1-2	3-4	5-6	7-8	9+
I. Foreign Language						
No CC Attendance	25.1%	24.1%	28.2%	17.1%	3.7%	1.8%
Incidental Attend.	25.3	27.8	29.7	14.2	2.6	0.4
Subst., but no Degree	44.0	28.0	20.4	6.6	0.8	0.2
Assoc. Degree Only	36.8	26.2	23.9	11.3	1.7	0.2
No Assoc, but BA	29.8	25.4	30.3	11.0	1.7	1.8
AA from CC + BA	25.2	30.5	29.6	10.4	4.1	0.2
II. Science						
No CC Attendance	7.7	21.9	34.1	28.1	7.3	0.8
Incidental Attend.	10.1	22.1	32.9	25.0	8.2	1.8
Subst.,but no Degree	11.8	37.4	32.6	14.6	2.9	0.7
Assoc. Degree Only	10.5	31.4	31.7	20.1	5.7	0.5
No Assoc, but BA	6.8	25.1	33.3	28.0	6.1	0.8
AA from CC + BA	4.9	26.8	36.3	25.0	5.9	1.2
III. Math						
No CC Attendance	7.6	15.1	28.7	37.9	9.9	0.9
Incidental Attend.	10.4	18.7	25.7	38.7	6.4	0.1
Subst.,but no Degree	12.1	28.5	32.8	21.9	4.6	0.2
Assoc. Degree Only	11.1	26.1	32.8	24.0	5.7	0.3
No Assoc, but BA	6.8	20.2	32.0	32.9	7.5	0.7
AA from CC + BA	4.5	17.5	34.6	35.1	7.5	0.8

Table 17

EQUATED 1972 SAT/ACT SCORES FOR NLS/PETS SAMPLE
by Highest Degree Earned to 1984

IF: At least one transcript received and total earned credits of 11 or more (N=10,591)

	Mean	S.D.	St.Err.	Min	Max	N
CATEGORY:						
All	958	204	2.42	474	1560	7095
No Degree	890	190	3.96	474	1554	2309
A.A. Degree	870	164	6.88	474	1424	570
B.A. Degree	998	195	3.41	474	1560	3290
Masters	1046	199	8.46	506	1539	555
Doc/1st Prof	1169	184	12.25	700	1539	225
By Type of CC Attendance:						
None	995	204	2.98	474	1560	4706
Incidental CC	968	184	10.09	490	1495	331
Non-Incid CC,NoDeg	843	172	5.58	474	1554	955
AA Only, CC Only	871	162	7.40	474	1424	479
CC + 4yr and BA	931	197	11.02	490	1495	320
AA from CC + BA	920	185	10.61	506	1424	304
By Educ. Aspirations [PLANS] in 1972:						
Voc/Tech	847	165	12.38	474	1365	178
	[856	165	11.13	490	1365	220]
Associate's	820	159	13.10	490	1199	147
	[843	159	7.88	474	1365	405]
Bachelor's	933	181	4.64	474	1539	1517
	[976	183	3.36	474	1539	2963]
Graduate	1036	192	3.72	474	1554	2669
	1082	201	5.94	474	1560	1141]

NOTE: SAT/ACT scores are arrayed in 35 bands, the lowest value of which is 474, and the highest, 1560.

Table 18

GRADE POINT AVERAGE for THOSE WHO EARNED NO DEGREE OF ANY KIND and ATTENDED COMMUNITY COLLEGES
(by total credits earned; unweighted)

Credit Range:	<30	30-59	60-89	90+	N
GPA:					
A / A-	13.2%	12.2%	11.6%	11.9%	283
B	22.7	31.9	37.4	30.8	649
B-	24.0	27.3	23.3	30.8	573
C	31.0	26.3	26.6	26.4	635
C-	7.3	2.4	1.1	----	91
D/F	1.5	---	---	----	14

Table 19

Community College "Majors" of the NLS/PETS Sample: Associate's Degree Holders v. Those Who Earned More than 30 Credits in Community Colleges but No Degree of Any Kind

(Unweighted)

"Major"	Assoc. Holders N	Assoc. Holders %	No Degree N	No Degree %
Liberal Arts & Sciences	252	15.8%	80	3.8%
General Studies	232	14.5	7	0.3
Business Administration	133	8.3	67	3.2
Nursing	122	7.6	15	0.7
Engineering Technologies	112	7.0	62	3.0
Office Support Occupations	107	6.7	56	2.7
Allied Health & Related	105	6.6	39	1.9
Protective Services	60	3.8	19	0.9
Fine Arts	51	3.2	16	0.8
Agriculture and Nat. Resour.	44	2.8	6	0.2
Repair, Precision Product.etc.	43	2.7	30	1.4
Accounting	36	2.3	24	1.2
Vocational Marketing	33	2.1	4	0.1
Computer Science	33	2.1	26	1.2
Education	32	2.0	19	0.9
Social Sciences	26	1.6	10	0.5
Humanities	24	1.5	5	0.1
General Science	13	0.8	2	0.0
Interdisciplinary: Unclass.	6	0.4	10	0.5
Other Vocational Fields	70	4.4	24	1.2
Other General Studies	8	0.5	20	1.0
Other Arts & Sciences	46	2.9	30	1.4
Indeterminable	4	0.3	1510	72.6
TOTAL:	1598		2081	

NOTE: The rules for assigning a major CIP code where none had been assigned were somewhat elaborate. The distinction between "Liberal Arts & Sciences" and "General Studies" was that, in the case of the former, no more than 20% of earned credits could be outside the traditional arts and sciences fields. For other, more specific "majors," the threshold for consideration was 18 credits in a given field or related fields. After that point, the final assignment depended on the total number of credits earned at the community college and other features of the total student record.

COURSE-TAKING DIFFERENTIALS by COMMUNITY COLLEGE ATTENDANCE PATTERN

Table 20

The table answers the question: How much more likely were NLS/PETS students to take a particular course in an attendance pattern largely limited to community colleges (Community College Attendance Patterns #1-3) versus an attendance pattern involving both community colleges and four-year colleges (Community College Attendance Patterns #4-5)? The answer is expressed in a ratio:

$$\frac{\text{Cases under Patterns \#1-3}}{(\text{Cases under Patterns \#4-5}) \times 2}$$

Only courses taken by 100 or more students are included.

COURSE	RATIO	OR CIP CODE*/+
Technical Mathematics	5.97	270801*
Pediatric Nursing	5.29	181103
Business Math: Arithmetic-Based	4.70	270901*
Technical Drafting	3.75	480101+
Arithmetic	3.52	270102*
Architectural Drafting	3.08	480102
Airplane Piloting & Navigation	3.00	490102
Small Business Management	2.91	061801
Job Seeking Skills	2.80	320105
Data Processing	2.70	110301+
Remedial English/Writing	2.69	232001*
Remedial Reading	2.66	232002*
Pre-Collegiate Algebra	2.56	270103*
Business English	2.55	070901*
Human Biology	2.54	260102*
Intro to Business Administration	2.37	060101+
Nursing: General	2.36	181101
Self-Adjustment, Pers. Appearance	2.28	370104+
Law Enforcement: General	2.26	430108+
Graphic Design, Arts, Lettering	2.24	500402+
Basic Academic Skills: General	2.22	320102
Anatomy & Physiology	2.17	260801*
Cooperative Ed: Field Unspecified	2.12	901000*
Applied Psych., Interpers. Rels.	2.00	350101+
Criminalistics	1.96	430105+
Engineering Graphics	1.92	145001*
Social Sciences: General	1.89	450101
Commercial Art	1.85	480203
Retailing	1.80	080705
Remedial Speech	1.77	232003*
Freshman Orientation	1.77	903000*
Computer Programming	1.70	110201+

*/+: Office of Research version of the Classification of Instructional Programs (CIP). An asterisk (*) indicates new code, i.e. not in the published version of CIP; a plus (+) indicates a modified version of the coverage of an existing CIP code.

Table 21

COURSES REGISTERING HIGHEST % of CREDITS EARNED,
by COMMUNITY COLLEGE ATTENDANCE PATTERN

	Community College Only	% of Creds	Comm. Coll. and 4-Yr.	% of Creds
1.	English Comp: Regular	4.8	English Comp.: Regular	3.6
2.	General Psychology	2.8	General Biology	2.2
3.	General Biology	2.1	General Psychology	2.1
4.	Intro. Accounting	1.9	Physical Educ. (Activ.)	2.0
5.	Physical Educ. (Activ.)	1.9	General Chemistry	1.7
6.	Intro. Sociology	1.7	Intro. Economics	1.6
7.	General Chemistry	1.6	Calculus	1.5
8.	Intro. Economics	1.5	Intro. Sociology	1.4
9.	Nursing: General	1.4	World/Western Civ.	1.4
10.	Intro. Communications	1.4	Intro. Accounting	1.3
11.	World/Western Civ.	1.2	U.S. Government	1.3
12.	Remedial Eng./Writing	1.2	Advanced Accounting	1.2
13.	U.S. Government	1.2	Intro. Physics	1.2
14.	U.S. Hist.:Survey	1.1	U.S. Hist.: Survey	1.1
15.	Stenography	1.0	Intro. Communication	1.1
16.	Calculus	1.0	Elem/Intermed. Spanish	1.1
17.	College Algebra	1.0	Music: Performance	1.1
18.	Pre-Collegiate Algebra	0.9	College Algebra	0.9
19.	Music: Performance	0.9	Intro. Literature	0.8
20.	Anat. & Physiology	0.9	English Literature	0.8
21.	Elem/Intermed. Spanish	0.9	Developmental Psych.	0.8
22.	Business Law	0.9	Art History	0.8
23.	Intro. Physics	0.8	Business Law	0.8
24.	Secretarial: Gen.	0.8	American Literature	0.7
25.	Intro. Business	0.7	Intro. Management	0.7
26.	Intro. Literature	0.7	Organic Chemistry	0.7
27.	Aircraft Mechanics	0.7	Statistics (Math)	0.7
28.	Basic Mathematics	0.7	Physical Sci.: Gen.	0.6
29.	Art History	0.6	Intro. Philosophy	0.6
30.	Intro. Management	0.6	U.S. Hist. Since 1865	0.6
31.	Business Arithmetic	0.6	Geography: General	0.6
32.	U.S.History Since 1865	0.6	U.S. Hist. to 1865	0.6
33.	Geography: General	0.6	Zoology: Gen.	0.6
34.	Advanced Accounting	0.6	Elem/Intermed French	0.5
35.	Technical Math	0.5	Phys. Educ. (Educ.)	0.5
36.	Personal Health: Gen.	0.5	Bible Studies	0.5
37.	U.S.History to 1865	0.5	Educational Psych	0.5
38.	Electronics Technology	0.5	Remedial Eng./Writing	0.5
39.	Remedial Reading	0.5	Basic Mathematics	0.5
40.	Data Processing	0.5	Finance	0.5
Total % of Creds./Top 40:		44.3%		41.7%

Table 22

ILLUSTRATIVE COURSE ENROLLMENT DIFFERENTIALS: COMMUNITY COLLEGES v. OTHER TYPES OF INSTITUTIONS

Some 21.5% of all course enrollments for the 12,285 NLS/PETS students with courses on their transcripts were in community colleges. This chart provides answers to the question: in which courses typically offered by both 2-yr and 4-yr institutions were enrollments dominated more by community colleges? In other words, where was the community college the principal provider of knowledge to this cohort? The fields chosen are illustrative, not exhaustive, and, in each case, I provide data for a related course in wich the percentage of enrollments in community colleges was comparatively low. Only courses with a minimum of 100 enrollments are included.

Community College Dominance			Contrasting Case		
Course	% CC	N	Course	% CC	N
Landscaping	34.0	103	Gen. Horticulture	18.6	145
American Studies	27.3	874	Latin Amer. Studies	12.5	199
Hispanic-Amer. Studies	28.3	290	Afro-Amer. Studies	11.4	622
Bus. Admin: General	46.6	1778	Management: General	19.3	2654
Business Law	29.6	2872	Corporate Finance	6.0	1711
Intro. Accounting	36.5	6099	Tax Accounting	13.6	997
Real Estate	32.7	765	Insurance	13.2	371
Retailing	42.9	431	Gen. Marketing	18.5	1143
Intro. Communications	32.1	4930	Mass Communications	9.1	667
Data Processing	54.4	1088	Intro. Comput. Sci.	16.2	1645
Engineering Physics	42.4	297	Engin. Mechanics	8.6	978
Occupat. Therapy	28.6	168	Exercise Physiology	7.8	619
Nursing: General	31.1	2302	Publ. Health Nursing	3.4	292
Child Devel/Care	30.6	1074	Family Relations	18.7	567
Technical Writing	32.7	913	Creative Writing	16.2	781
Anat. & Physiol.	36.6	2016	Physiol.:Human/Anim.	8.9	1147
Pre-Colleg. Algebra	58.5	2418	Finite/Discr. Math.	21.9	672
Philosophy: Gen.,Intro	23.3	2295	Ethics	11.4	960
Physical Sci.:General	26.0	2009	Geology: General	13.4	2337
General Psychology	31.5	9732	Developmental Psych.	15.5	2820
Physical Anthropology	30.9	392	Anthropol.:General	11.0	1768
U.S.Hist: Survey	32.2	3772	Euro. Hist from 1789	6.8	649
Socio: Deviance, etc.	22.9	1561	Sociol: Race, Ethnic	16.2	517
Ceramics	29.0	665	Graphic Design	20.6	374
Photography	35.1	1023	Film Arts: General	17.1	422

NOTE: Examples are presented in the order in which general fields (e.g. Agriculture, Allied Health, Home Economics, English) are presented in the Classification of Instructional Programs (CIP).

Table 23

LABOR MARKET OUTCOMES IN 1986
for COMMUNITY COLLEGE ATTENDEES
of the HIGH SCHOOL CLASS OF 1972

Condition: Known cases only for most recent full-time job

	Earned No Degree	Associate	Associate Plus BA or Higher Deg.
DOT Category:			
"Managers"	13.1%	13.4%	14.9%
Nurses & Health Technicians	3.3	13.0	10.4
Office Support Occupations	11.7	8.9	6.2
Teachers	1.6	8.3	7.6
Engineering Tech and oth. Tech.	4.4	6.6	6.6
Craftsmen	13.0	6.6	5.5
"Buy/Sell," i.e. purchasers and salespeople	5.4	5.9	6.5
Other Clerical	7.0	5.2	4.1
Operatives	7.0	4.5	3.2
Other	33.5	27.6	35.0

Table 24

THE EMPHASES OF WORK in 1986 for MEMBERS OF THE HIGH SCHOOL CLASS OF 1972 WHO RECEIVED AN ASSOCIATE's DEGREE FROM A COMMUNITY COLLEGE
(by community college major; weighted; N=910)

CC MAJOR:	In Most Recent Full-Time Job, Worked "a Great Deal" with: IDEAS	PEOPLE	PAPER	THINGS	N
Agric. & Nat. Resources	48.5%	58.0%	22.0%	41.0%	35
Engin. Tech./Other Tech.	62.5	66.6	46.4	62.2	81
Business	43.7	77.6	55.0	34.0	100
Business Support Servs.	40.3	64.6	62.8	33.5	91
Computer Science	55.5	56.4	51.4	38.7	23
Educ./Human Servs.*	31.3	71.9	43.8	28.1	45
Health/Nursing	44.8	78.3	51.2	33.7	155
Misc. Trades	41.3	49.3	23.6	47.0	36
Protective Services	65.1	81.8	69.4	22.3	37
Fine Arts	46.5	77.5	68.6	16.0	23
Sciences	47.4	72.3	61.3	72.4	11
Liberal Arts	47.0	72.7	40.2	30.6	123
General Studies	51.4	55.9	42.2	39.8	130
Other	20.7	86.1	43.4	25.5	20
TOTAL:	45.3%	66.8%	46.3%	38.9%	
TOTAL for those who said their education was very relevant to their work:	65.9	72.5	48.6	44.9	147
TOTAL for B.A. recipients who never attended a CC and earned >60 credits	63.0	80.6	52.8	24.0	3666

* The weighted data for this line were extremely counterintuitive, e.g. 43.2% for PEOPLE, 57.0% for THINGS. The contrast between unweighted and weighted data were so extreme that I have used the unweighted data only.

Table 25

YEAR OF FIRST ATTENDANCE AT COMMUNITY COLLEGE
by OVERALL DELAY OF ENTRY INTO POSTSECONDARY EDUCATION
(weighted)

IF: One or more transcripts received and attendance at a community college. No missing cases (N=4005).

	DELAY PATTERN (in Months)					
	No Delay	6-15	16-27	28-51	52+	Total
YEAR 1st ATT.						
1972	50.5%	----	----	----	----	50.5%
1973	3.9	10.4%	----	----	----	14.3
1974	2.9	0.4	5.7%	----	----	9.0
1975	1.0	0.3	0.1	4.0%	----	5.4
1976	1.0	0.1	0.2	4.4	----	5.7
1977-78	2.4	0.3	0.3	0.4	5.3%	8.6
1979-80	1.8	0.2	0.1	0.2	2.9	5.2
1981-84	0.1	---	0.1	---	0.6	0.8
Indeterm.	---	---	---	---	---	0.5
TOTAL:	63.6%	11.7%	6.5%	9.0%	8.8%	

Table 26

ATTENDANCE SEQUENCES AT COMMUNITY COLLEGES BY THOSE WHO EARNED BACHELOR'S DEGREES by 1984: High School Class of 1972

	N	Weighted %
Attendance at CC *before* earning B.A.	795	14.7%
Attendance at CC *after* earning B.A.	32	0.5
Attendance at CC both before *and* after earning B.A.	71	1.5
% of CC Attendees	16.8%	16.7%

Table 27

PART 1: YEAR OF B.A. by POSTSECONDARY ENTRY: NLS/PETS Sample

IF: Number of transcripts received was 1 or more and total credits earned were 11 or more.

	<1976	1976	1977-78	1979-80	1981-84	TOT
No Delay	5.8%	57.7%	27.1%	5.8%	3.7%	87.7%
6-15 Mon. Delay	2.8	29.1	49.7	11.4	7.0	6.5
16-27 Mon. Delay	3.9	38.6	30.7	15.0	11.8	2.6
28-51 Mon. Delay	---	4.3	23.1	44.4	27.4	2.4
52+ Month Delay	---	----	5.0	25.0	75.0	0.8
TOTALS:	5.4%	53.6%	28.4%	7.4%	5.2%	

PART 2: INFLUENCE OF COMMUNITY COLLEGE ATTENDANCE ON YEAR OF BACHELOR'S DEGREE RECEIPT for the High School Class of 1972
(weighted)

N=4886 B.A.s

	<1976	1976	1977-8	1979-80	1981-4	% of B.A.s
Attendance Type:						
None	5.4%	59.5%	25.0%	5.9%	4.2%	75.3%
Incidental	4.6	58.9	24.8	6.0	5.7	4.8
Substantial, but no A.A.	2.8	39.3	37.5	12.0	8.4	9.1
A.A. from CC	2.7	37.8	37.5	14.1	7.9	10.9
TOTALS:	**4.9**	**55.2**	**27.5**	**7.3**	**5.0**	

Table 28

COMMUNITY COLLEGE "MAJORS" MOST LIKELY TO LEAD TO BACHELOR's DEGREES
(unweighted)

	Assoc. from CC Only (N=910)	Assoc. from CC and Bachelor's (N=435)	Assoc. from Other + BA (N=84)
Assoc. Degree Type:			
Arts and Sciences	17.5%	43.9%	40.0%
General Studies	13.7	22.0	24.2
Business/Accounting	11.0	9.4	9.5
Other Vocational	57.8	24.7	26.3

Table 29

BACHELOR's DEGREE MAJORS OF COMMUNITY COLLEGE TRANSFER STUDENTS v. THOSE OF ALL OTHER B.A.RECIPIENTS (weighted)

If: At least one transcript received and more than 10 credits earned prior to the B.A.

	CC Transfer BAs N=970	All Other BAs N=3904
Business	18.4%	15.7%
Education	18.4	16.0
Engineering, C.S.	3.4	5.4
Phys Sci/Math	3.2	4.6
Humanities	5.4	6.2
Fine/Perf. Arts	4.0	4.7
Social Sciences	16.0	17.8
Biolog. Sciences	5.1	6.5
Allied Health Sci.	7.5	7.5
Agric.,Nat Resources	3.0	3.3
Applied Soc. Sci.	9.0	7.8
Technical Support	3.1	1.0
Vocat. Human Services	2.0	1.3
Other	1.4	2.3